

U.S.S.N. 10,761,659

Listing of Claims

1. (previously presented) A load-lock chamber comprising:

a chamber wall defining a chamber interior;

a bellows housing defined by said chamber wall;

a shaft opening provided in said bellows housing;

a flexible bellows provided in said bellows housing and sealing said shaft opening from said chamber interior for positioning said cassette stage within said chamber interior at a wafer transfer position level;

a lift shaft having a cassette stage extending through said shaft opening and said bellows into said chamber interior; and,

a shaft rotation device sealably isolated from said chamber interior by said bellows and operably engaging said lift shaft for rotating without raising said lift shaft and said cassette stage in said chamber interior to said wafer transfer

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position.

2. cancelled.

3. (original) The load-lock chamber of claim 1 wherein said bellows comprises a metal alloy.

4. (original) The load-lock chamber of claim 3 further comprising a shaft rotation device operably engaging said lift shaft for rotating said lift shaft and said cassette stage in said chamber interior.

5. (previously presented) The load-lock chamber of claim 1 wherein said shaft rotation device comprises a housing and a housing magnet provided in said housing for magnetically rotating said lift shaft.

6. (original) The load-lock chamber of claim 5 wherein said bellows comprises a metal alloy.

7. (original) The load-lock chamber of claim 3 wherein said metal alloy comprises stainless steel.

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8. (original) The load-lock chamber of claim 7 further comprising a shaft rotation device operably engaging said lift shaft for rotating said lift shaft and said cassette stage in said chamber interior.

9. (original) The load-lock chamber of claim 8 wherein said shaft rotation device comprises a housing and a housing magnet provided in said housing for magnetically rotating said lift shaft.

10. (previously presented) A load-lock chamber comprising:

a chamber wall defining a chamber interior;

a bellows housing defined by said chamber wall;

a shaft opening provided in said bellows housing;

a lift shaft having a cassette stage extending through said shaft opening and said bellows housing and into said chamber interior, said lift shaft for positioning said cassette stage within said chamber interior at a wafer transfer position level;

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a bellows mount frame carried by said lift shaft;

a flexible bellows carried by said bellows mount frame in said bellows housing and sealing said shaft opening from said chamber interior; and,

a shaft rotation device sealably isolated from said chamber interior by said bellows and operably engaging said lift shaft for rotating without raising said lift shaft and said cassette stage in said chamber interior to said wafer transfer position.

11. cancelled.

12. (original) The load-lock chamber of claim 10 wherein said bellows comprises a metal alloy.

13. (original) The load-lock chamber of claim 12 further comprising a shaft rotation device operably engaging said lift shaft for rotating said lift shaft and said cassette stage in said chamber interior.

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14. (previously presented) The load-lock chamber of claim 10 wherein said shaft rotation device comprises a housing and a housing magnet provided in said housing for magnetically rotating said lift shaft.

15. (original) The load-lock chamber of claim 14 wherein said bellows comprises a metal alloy.

16. (original) The load-lock chamber of claim 15 wherein said metal alloy comprises stainless steel.

17. (previously presented) A load-lock chamber comprising:

a chamber wall defining a chamber interior;

a bellows housing defined by said chamber wall;

a shaft opening provided in said bellows housing;

a flexible bellows provided in said bellows housing and sealing said shaft opening from said chamber interior;

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a lift shaft having a cassette stage extending through said shaft opening and said bellows into said chamber interior, said lift shaft for positioning said cassette stage within said chamber interior at a wafer transfer position level; and

a shaft rotation device sealably isolated from said chamber interior by said bellows, said shaft rotation device comprising an annular housing magnet surrounding said lift shaft for rotating without raising said lift shaft and said cassette stage in said chamber interior to said wafer transfer position.

18. (original) The load-lock chamber of claim 17 wherein said bellows comprises a metal alloy.

19. (original) The load-lock chamber of claim 18 wherein said metal alloy comprises stainless steel.

20. (original) The load-lock chamber of claim 17 further comprising a bellows mount frame carried by said lift shaft and wherein said bellows is carried by said bellows mount frame.

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21. (previously presented) The load-lock chamber of claim 1, wherein the shaft rotation device is disposed within said bellows.

22. (previously presented) The load-lock chamber of claim 17, wherein the shaft rotation device is disposed within said bellows.